5.0 LAND USE PLAN *(italics represent changes to current plan)*

5.1 Current Land Use

Tiverton occupies 35.5 square miles on the eastern shore of the Sakonnet River. The pattern of land use and development within this area includes four distinct sectors - north Tiverton, Stone Bridge, east Tiverton, Stone Bridge and south Tiverton.

North Tiverton, *the area extending north and west of Route 24, is an area of older residential and commercial development.* It includes neighborhood retail and service *businesses* along Main Road and residential development, primarily single family units, on the side streets. *Along Main Road, small scale* strip commercial uses prevail. *The west side of Fish Road, the other north-south corridor in this area of town, is primarily residential while the east side consists of industrial land, much of it vacant. The vicinity of the Route 24 - Fish Road intersection is an evolving nexus of major non-residential uses. Along the Fall River border is the* Bourne Mill, an historic *and architecturally* distinctive 19th Century mill building, currently *being used as a warehouse but with potential for mixed use redevelopment, including affordable housing.*

Other significant land uses in north Tiverton include Pocasset *Elementary* School, the eight-acre Pocasset Park, and an oil tank farm at the foot of State Avenue. *The former oil tank farm on about 100 acres on the west side of Main Road opposite Souza Road has undergone remediation and is being redeveloped into a mixed use but primarily age-restricted community of condominiums called the Villages on Mount Hope Bay.*

South of Route 24 on Main Road is Stone Bridge, one of the historic areas of Tiverton. This area has a maritime aura, with active waterfront uses backed by older residences and several institutional uses. The residential upland is dominated by 19th century homes that give the area its historic character. Waterfront uses include the public Grinnell's Beach, several commercial establishments, the Tiverton Yacht Club, a boat launch, *and several marine related businesses along the Sakonnet River.* Homes along Riverside Drive also capture the maritime flavor; several are built on pilings along the shoreline. Other land uses include Fort Barton *Elementary* School, the Town Hall, Essex Library and Fort Barton with its Revolutionary War redoubt.

East Tiverton, the area east of Route 24 and north of Bulgarmarsh Road, is predominantly residential. A commercial area at the intersection of Bulgarmarsh Road and Stafford Road is known locally as Bliss Four Corners, *although commercial uses extend north along Stafford Road.* The Tiverton High School, Middle School and Ranger Elementary School are *within this area of town*, as is Stafford Pond, a principal source of the town's water supply. *Stafford Pond is generally surrounded by residential use with some protected areas along its southwestern shores. West of Stafford Pond, in the area of Route 24 and Fish Road, are municipal uses including the public works garage and police facility, as well as the 228 acre industrial park, whose sole occupant in 2005 is a natural gas-generated electric power plant. Off Stafford Road in the northeast corner of town is an age-restricted manufactured home community called Countryview Estates.*

South Tiverton, *the area south of Bulgarmarsh Road*, *remains* mostly rural and agricultural in character, *though suburban style residential subdivisions are increasingly fragmenting the area.* Large estates lie along the shoreline, with small residential developments on Crandall, King, Lake and East Roads, and *some* large parcels in agricultural use. The historic Tiverton Four Corners has developed into a charming commercial area, and a small commercial cluster *exists* at the intersection of East and Lake Roads.

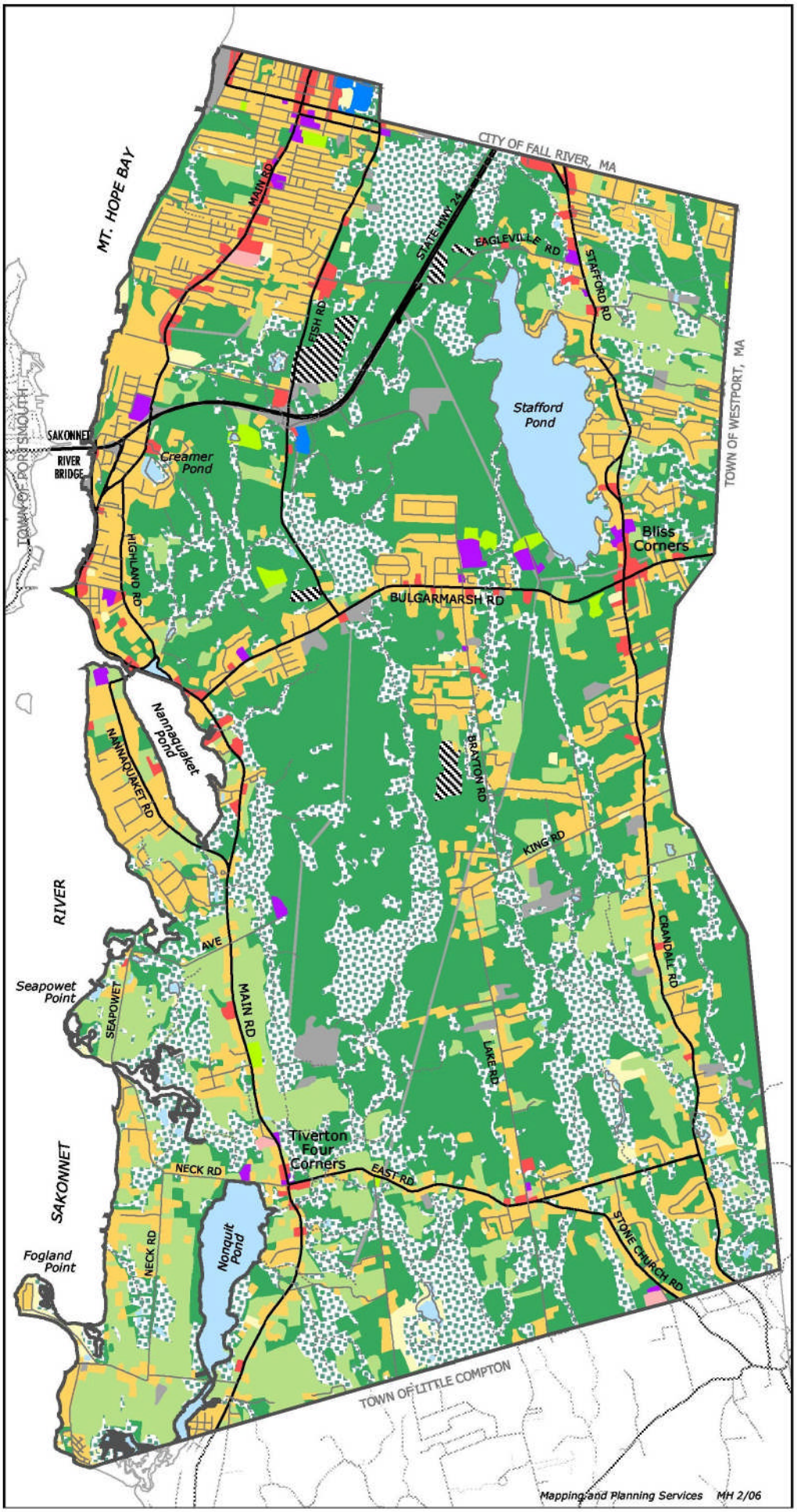
Much land has been set aside *for open space* and to protect *environmentally* sensitive areas, notably Reucker's Wildlife Preserve, Seapowet Marsh, Fogland Marsh, *Pardon Gray Preserve, Eight Rod Management Area* and Weetamoo Woods. Additionally, Nonquit Pond and its watershed cover a significant area. This is part of the City of Newport's public water system, and *a zoning overlay to prevent intensive development and protect the watershed is now in place as it is for Stafford Pond.*

Specific land uses in south Tiverton include Union Public Library just north of Tiverton Four Corners and the Nonquit School on Neck Road west of Four Corners. The area around Four Corners is a National Register Historic District *and much of the commercial portion of it is zoned Village Commercial, a district created to protect its historic character.* The Seapowet and Fogland areas, *including Fogland Beach*, are significant environmental, *scenic and recreational* resources. *A large town recreation area, the Town Farm, i*s located on Main Road. *The town landfill is located to the east of this recreation area.*

Figure 5-1 shows generalized land use based on land cover data obtained from the Rhode Island Geographic Information System (RIGIS) for the year 2003, with 2005 field updates. The breakdown of land use by acreage is as follows:

TABLE 5-1
LAND USE IN ACRES, 2005

Land Use	**Acres**	**Percent**
Residential	3,918	20.2 %
Commercial	319	1.6 %
Industrial	32	0.2 %
Agricultural	2,296	11.9 %
Utility/Transportation/ Waste Disposal	437	2.3 %
Mining or Extractive	119	0.6 %
Institutional	103	0.5 %
Cemeteries	24	0.1 %
Recreation (developed)	76	0.4 %
Forest and Brushland	7,034	36.3 %
Vacant Land/Transitional	186	1.0 %
Wetlands	4,001	20.7 %
Water/Saltwater	810	4.2 %
TOTAL	19,355	100 %



Generalized Land Use / Land Cover Classifications :

- Residential
- Commercial (sale of products & services)
- Industrial
- Utility, Waste Disposal & Transportation
- Developed Recreation
- Cemeteries
- Institutional (schools, hospitals, churches, etc.)
- Agricultural Land (inc. inactive)
- Forest and Brushland
- Vacant / Transitional
- Mining or Extractive
- Wetlands
- Water

Source: RIGIS 1995 Land Use/Land Cover updated using RIDOT 2003 and USDA-NAIP 2003 orthophotography. Minimum mapping unit 1/4 acre. Field corrections, 2005.

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N

0 1 Mile

The information depicted on this map is for general planning purposes only. It may not be adequate for legal boundary definition or regulatory interpretation.

TIVERTON COMPREHENSIVE COMMUNITY PLAN

Figure 5-1
GENERALIZED LAND USE 2005

5.2 Land Use Regulation

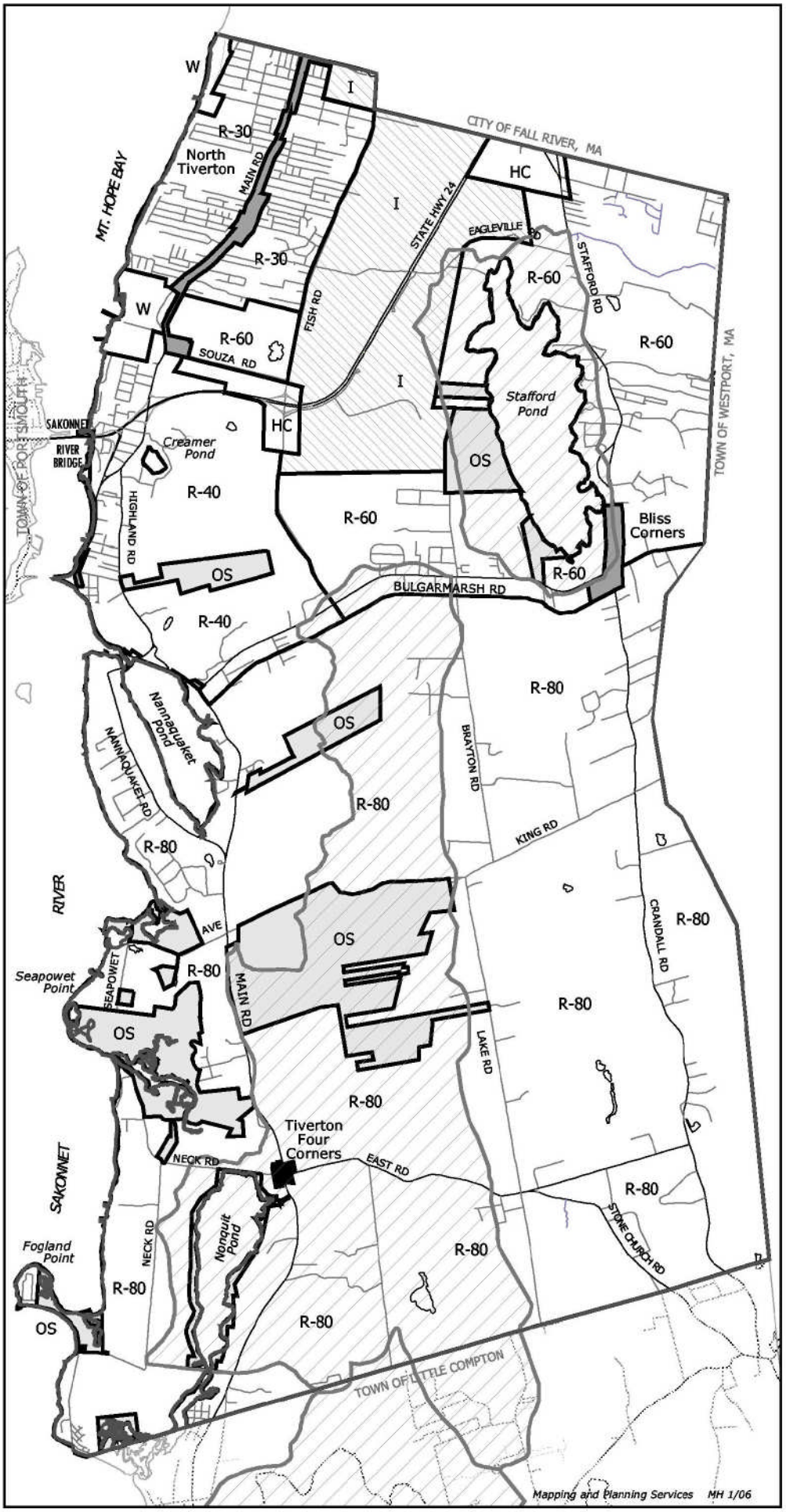
The establishment of land use districts through zoning is the most widely applied method of regulating land use. The *town's original* zoning ordinance was adopted in 1964, with a revision in 1970. *A complete rewrite was done in 1994 to comply with the Rhode Island Zoning Enabling Act. To ensure consistency with the goals and objectives of the Tiverton Comprehensive Plan that was certified by the state in 1997, major revisions to the zoning ordinance were approved in 2001. These included provisions for Rural Residential Developments, the addition of a watershed protection overlay district for Nonquit Pond, the creation of a Village Commercial District for Tiverton Four Corners, a new Open Space/Conservation district, and a new Waterfront District.*

Land use is now controlled with *four* residential districts, *four* commercial districts, *one* industrial district *and an open space district.* In addition, there are watershed protection overlay districts around Stafford *and Nonquit* Ponds. Figure *5-2, the Tiverton Zoning Map,* illustrates the distribution of these use districts throughout the town. Table *5-2 below* reflects the acreage within each existing zoning district, *while* Table *5-3* summarizes the existing zoning districts, their intent and basic area standards.

TABLE *5-2*
LAND AREA BY ZONING DISTRICT*, 2004*

District	Acres	Percent
Residential		
Residential R-30	997	5 %
Residential R-40	1,432	7 %
Residential R-60	2,656	14 %
Residential R-80	10,158	52 %
Commercial		
Village Commercial VC	11	--
General Commercial GC	149	1 %
Highway Commercial GC	211	1 %
Waterfront W	166	1 %
Industrial		
Industrial I	1,407	7 %
Environmental		
Open Space OS	1,521	8 %
Water Bodies	716	4 %
Total (rounded up)	19,420	100 %

Source: Tiverton Zoning Map*, adopted June 4, 2001 and amended June 28, 2004*



ZONING DISTRICTS

- GENERAL COMMERCIAL
- HC — HIGHWAY COMMERCIAL
- VILLAGE COMMERCIAL
- I — INDUSTRIAL
- W — WATERFRONT
- R-30 — RESIDENTIAL R-30
- R-40 — RESIDENTIAL R-40
- R-60 — RESIDENTIAL R-60
- R-80 — RESIDENTIAL R-80
- OS — OPEN SPACE

WATERSHED PROTECTION OVERLAY DISTRICT

Source: Town of Tiverton Official Zoning Map adopted June 4, 2001 (inc. amendment June 28, 2004).

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0 1 Mile

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TIVERTON COMPREHENSIVE COMMUNITY PLAN

Figure 5-2
ZONING MAP 2004

TABLE *5-3*
ZONING DISTRICTS

District	***Description (minimum lot areas and allowable uses)***
Residential	
R-30	*30,000 sq. ft. lots; single and two-family residential, multi-family, nursing and retirement homes with special use permit*
R-40	*40,000 sq. ft. lots; single family residential, nursing and retirement homes with special use permit*
R-60	*60,000 sq. ft. lots; single and two-family residential, multi-family, nursing and retirement homes with special use permit*
R-80	*80,000 sq. ft. lots; single family residential, nursing and retirement homes with special use permit*
Commercial and Industrial	
VC	*12,000 sq. ft lots; small scale retail and commercial uses, design standards for preserving historic character (e.g. Tiverton Four Corners).*
GC	*12,000 sq. ft. lots; general commercial, community retail and service uses*
HC	*20,000 sq. ft lots; businesses requiring larger areas and highway access*
W	*10,000 sq. ft. lots; non-residential and mixed-use along Sakonnet River principally for marine dependent commercial uses*
I	*40,000 sq. ft. lots; industrial uses, including technology and office parks*

The watershed protection overlay *districts* around Stafford *and Nonquit* Ponds protect the quality of public drinking water by regulating development around the ponds. The overlay areas limit density of residential development, provide for a buffer from *the shorelines*, and restrict the use of chemicals, fuels, pesticides and other sources of contamination. *The overlay district regulations* also require an environmental review statement for proposed developments, *which allows the Planning Board to require additional constraints or restrictions on the development.*

In 1987, an ordinance was adopted to provide for cluster developments. It allowed modification of certain zoning requirements in order *to preserve* open space or create recreation areas within a subdivision. *As part of the 2001 zoning ordinance revisions, the cluster ordinance was replaced by regulations that provide for subdivision designs called Rural Residential Developments. This type of development incorporates conservation by design techniques to permit smaller house lots and open space preservation. It also allows privately maintained roads for special subdivisions where oversized lots are created (rural compounds). Road frontage requirements can also be relaxed under certain circumstances with common driveways used in order to decrease the number of curb cuts. Rural Residential Developments are meant to preserve rural character, protect the environment, and lower the long term public tax burden by decreasing the cost of infrastructure maintenance.*

New residential development should encourage open space preservation

Provisions for elderly housing have also been added to the zoning ordinance. The Manufactured Home Elderly Community (MHEC) regulations provide for self contained communities of moderately priced housing for residents age 55 and older. Other new uses provide for retirement and continuing care facilities, and the Age Restricted Mixed Use Community (ARMUC) regulations were established to allow the creation of the Villages on Mount Hope Bay.

Finally, a Large Scale Office Park Development (LSOPD) ordinance was written to allow the development of a technology/office park within the Industrial District for a site that has a minimum area of 125 acres and is serviced by public water and sewer.

The Tiverton Subdivision Regulations provide the procedures and standards for the division of land, as well as the specifications for street and infrastructure improvements. *The subdivision regulations were completely rewritten in 1995 to conform to the Rhode Island Land Development and Subdivision Review Enabling Act. Major amendments in 2003 adopted by the Planning Board provided complementary language for Rural Residential Developments, added site and building design standards for review of commercial and industrial developments, and enhanced aesthetics standards relating to residential subdivisions, such as tree preservation and viewshed protection.*

5.3 Development Trends

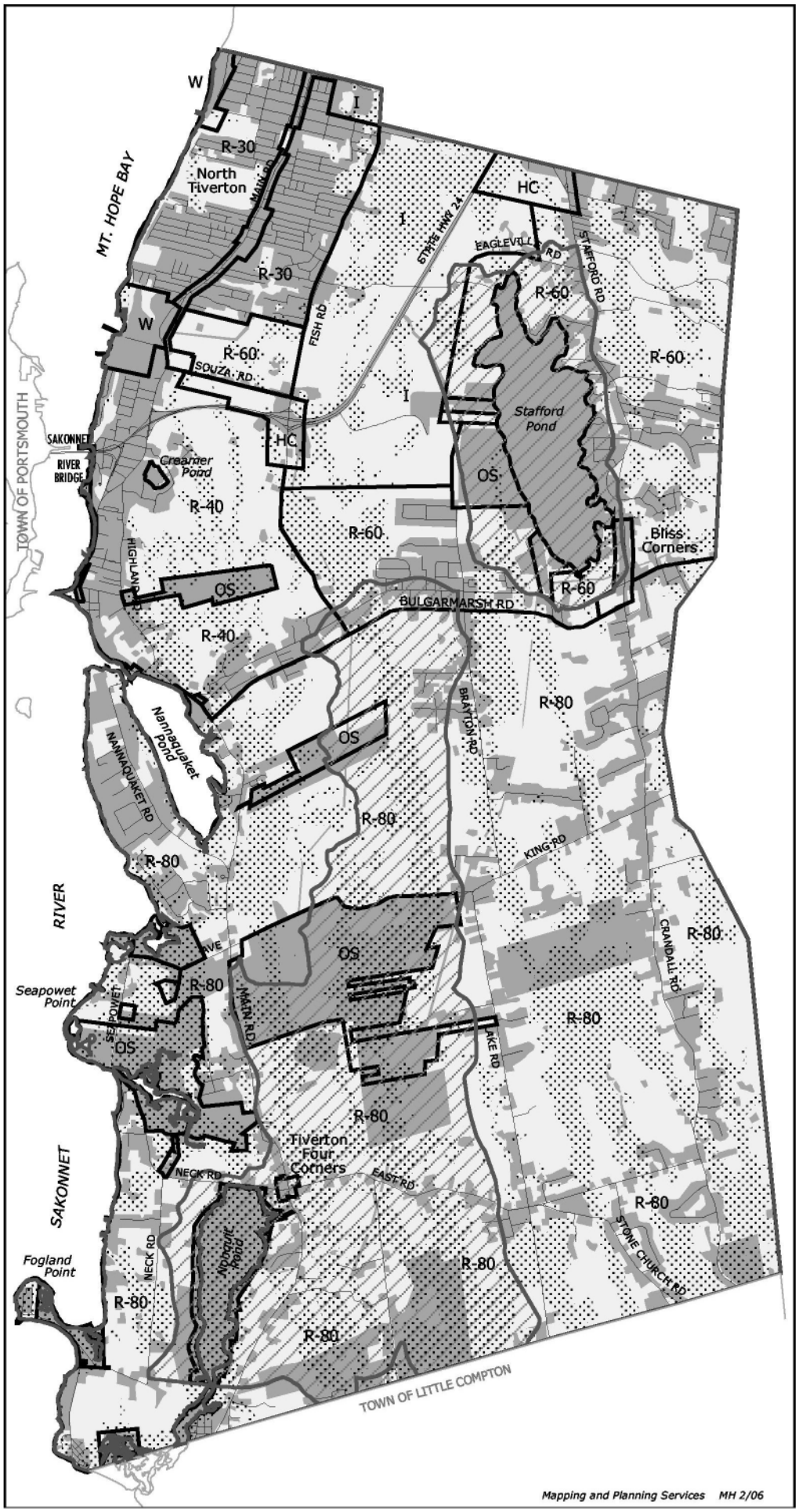
According to the *2000* U.S. Census, in the decade between *1990 and 2000* the population of Tiverton grew by *6.6%, as opposed to the state of Rhode Island as a whole, which grew by 4.5%.* Most of the development has been in the form of small-scale subdivisions, or single unit developments. Commercial development has included small establishments along Main Road in north Tiverton, at Bliss Four Corners, Stafford Road, Fish Road, and a small development on East Road in south Tiverton.

However, Tiverton is increasingly being influenced by a regional real estate and commercial development market centered in the greater Boston area. Its location in southeastern New England, convenient highway access, and land available for development have resulted in significant development pressures. This will only be increased with the potential construction of commuter rail service from Boston to Fall River. By 2005, Tiverton experienced proposals for more subdivisions than previous years, as well as retail development proposals of a regional nature.

Local factors are also adding to development pressure. They include: (1) the development of the Villages on Mount Hope Bay, which will lead to a demand for more retail uses; (2) the construction of a main sewer line along the shore of Mount Hope Bay from Fall River south to the Villages on Mount Hope Bay, then east to the industrial/technology park; and (3) the planned expansion of both sewers and water service. The development of the industrial/technology park, which has significant employment potential, could also result in a demand for both residential and commercial development.

5.4 Build Out Analysis and Future Land Use

A build-out analysis completed in early 2006 estimated future residential development potential in Tiverton. The estimated potential number of dwelling units that could be built as-of-right in different areas of the town was calculated based on existing zoning and using digital data from the Rhode Island Geographic Information System (RIGIS).



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DEVELOPABLE

ABSOLUTELY CONSTRAINED

PARTIALLY CONSTRAINED

R-60 ZONING DISTRICTS

WATERSHED PROTECTION DISTRICT (ZONE I & II)

Source: Tiverton Residential Buildout Analysis 2005, Mapping and Planning Services.

N

0 1 Mile

The information depicted on this map is for general planning purposes only. It may not be adequate for legal boundary definition or regulatory interpretation.

TIVERTON COMPREHENSIVE COMMUNITY PLAN

Figure 5-3
BUILDOUT ANALYSIS

The acreage of developable land within each zoning district was calculated by eliminating land already developed, land protected from development and land with physical constraints (wetlands and steep slopes). The methodology used is described in more detail in an appendix to this chapter. Limitations of the available digital data and the need to make certain assumptions necessitate that the overall and site-specific results should not be used for anything other than general planning purposes. Land with constraints to development with the zoning district boundaries overlaid is depicted in Figure 5-3.

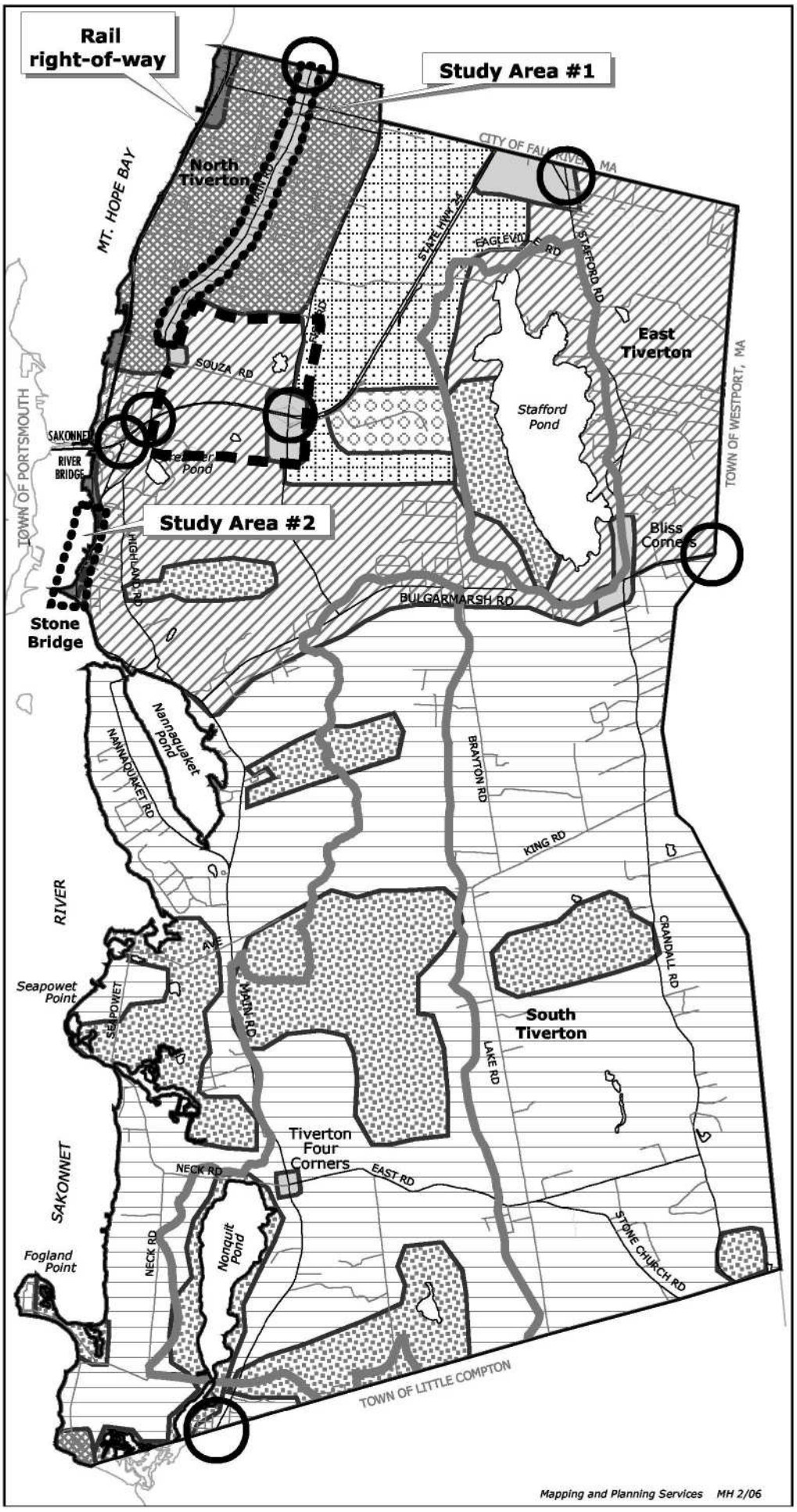
The build-out analysis projected that an additional 3,681 dwelling units could be developed as-of-right in Tiverton based on the land available for development and the zoning in place as of 2005. The acreage within each zoning district, including that within the Watershed Protection Overlay District (which requires larger minimum lot sizes) is summarized in Table 5-4 below. Under these build-out conditions, the total number of units would be in excess of 10,000 units (the 2000 Census counted 6,474 housing units). Based on an average household size of 2.5 persons, the town's population would increase by 9,203 persons resulting in a total population of 24,463 (the 2000 Census counted 15,260 persons.

TABLE 5-4
POTENTIAL RESIDENTIAL UNITS
BY ZONING DISTRICT, 2005

Zoning District	Total Acres	Total Buildable Acres	Buildable Acres within WPOD	Total Buildable Units
VC	11	3	0	0
GC	149	42	0	18
HC	211	122	0	0
I	1,403	857	0	0
W	166	133	0	0 *
R-30	997	192	0	317
R-40	1,433	572	12	612
R-60	2,657	982	274	763
R-80	10,158	3,972	1,279	1,971
OS	1,521	0	0	0
Water Bodies	717	0	0	0
Totals	**19,422**	**6,875 acres**	**1,565 acres**	**3,681 units**

Source: Mapping and Planning Services, 2006

Figure 5-4 contains the proposed Land Use Plan for Tiverton. It is based on a review of existing land use and zoning, and reflects the many goals and policies expressed in this Comprehensive Community Plan relative to desired future development, protection of open space and environmental features, and future planning efforts (see Planning Concept Chapter 3).



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FUTURE LAND USES:

- Watershed Protection
- Protected Open Space
- High Density Residential
- Med Density Residential
- Rural Residential / Agricultural
- Commercial Uses
- Waterfront-Related Uses
- Industrial Uses
- Industrial / Technology Park

Other Features:

- Town Center Area
- Study Areas
  - #1 Main Road -- commercial and mixed-use area
  - #2 Stone Bridge -- waterfront, recreational and commercial area
- Gateways
- Rail right-of-way

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0 1 Mile

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TIVERTON COMPREHENSIVE COMMUNITY PLAN

Figure 5-4
FUTURE LAND USE PLAN

5.5 Land Use Goal and Objectives

Goal

Promote land use patterns that are consistent with natural resource constraints, are environmentally and economically sound, minimize incompatibility among uses, *and preserve Tiverton's rural and small town character.*

Objectives

- Utilize the land use plan to guide future growth and development, and serve as the basis for future regulatory actions.

- *Evaluate the effectiveness of current zoning district designations, particularly the appropriateness of the areas currently zoned for industrial and highway commercial uses.*

- *Promote marine related land uses within the non-residential zoning districts along the Tiverton waterfront.*

- *Support the diversification of the town tax base and increase in net tax revenue through non-residential development, including the development of the town industrial/technology park, in a manner that is compatible with and protects the predominantly rural, historic, maritime and small town character of Tiverton.*

- Inventory and evaluate town-owned property to determine the use that promotes the long-term interests of the town.

- *Ensure that town staffing is adequate to meet the complex planning and regulatory challenges required as development pressures increase.*

- *Ensure that utilities are extended and provided only in a manner that is compatible with desired rate and density of future development and done with consideration of aesthetic impacts*.

5.6 Land Use Policies

Land Use and Zoning

The core of this Comprehensive *Community* Plan is to shape future land use so that it preserves the *rural and small town character* of the community. Land use, more than anything else, determines the kind of town Tiverton will be in the future. The starting point for land use planning is the zoning ordinance and the zoning map (Figure *5-2*), which establishes permitted uses and dimensional standards for each of the zones. *The zoning map resulted from a multi-year process that began with the completion and state approval of the original comprehensive plan, and culminated with the adoption of major ordinance revisions in 2001. Those revisions were based on the general land use plan*

and the respective land use policies in the comprehensive plan. The fundamentals of the existing ordinance are, therefore, adequate as a regulatory document for future land use in Tiverton. This plan proposes further refinements to the zoning ordinance, includes uncompleted policies from the previous comprehensive plan, and addresses emerging land use issues that need to be considered for future regulatory changes.

In addition to zoning, the development of land is managed by the application of the Tiverton Land Development and Subdivision Regulations, through the subdivision and site plan review process. Design review is also authorized by the Development Plan Review regulations contained in the zoning ordinance. These land use regulations control not only use and density, but site and building design; therefore it is important that the town periodically review the effectiveness and suitability of both its zoning ordinance and subdivision regulations. There are also environmental limitations that supplement town regulations. Areas of town not suitable for development because of natural constraints and environmental sensitivity are governed by federal and state regulations, which provide for input, or even peremptory action on the part of the town. These regulatory controls, given careful monitoring, *and town zoning restrictions preventing development on "unsuitable land,"* will protect these areas without additional *regulations.*

Policy 1: ***Ensure that the land use goal and specific visions for desirable future development, as stated in this Comprehensive Community Plan, are achievable with the zoning and subdivision regulations, and that these regulations remain relevant through periodic monitoring and review.***

In 2005, approximately *1,400 acres (7%)* of the land area of the town is zoned for industrial use. This area, located in north Tiverton, is largely undeveloped. Several small general business or light industrial uses have located within the district, and a portion of the area is used for road material storage; however, the district is largely undeveloped. Much of this industrial land is wetland. *As of 2005, approximately 228 acres remain available for development as the town's industrial/technology park, and there have been no development proposals for the remaining land zoned for industry despite the proximity of public water and sewer.* The future use of this property should be carefully considered to avoid environmental degradation and to maximize public benefit.

Policy 2: ***Evaluate the development potential of the vacant industrial property in town, and consider rezoning to allow uses that are compatible with the environment, the surrounding area and the small town character of Tiverton.***

Within its zoning ordinance, Tiverton has three commercial and waterfront districts that vary in terms of the intensity of uses allowed. The least restrictive of these is the Highway Commercial District, which is set aside for commercial enterprises that require large land areas for parking and development, and which rely to a certain degree on highway access. A number of regional retail developments proposed in the early 2000's have served to crystallize the town's position on these types of development, as reflected

in adverse public reaction and proactive steps taken by various town councils (see Economic Development Chapter). As a result, the town must consider the need for this type of commercial district, taking into account the fiscal impacts, traffic and other quality of life impacts of the type of commercial development it encourages.

Policy 3: ***Evaluate the definition, allowable uses and dimensional requirements of the Highway Commercial District, and modify if necessary to be consistent with the land use goals and objectives of this Comprehensive Community Plan.***

The Tiverton Four Corners area contributes significantly to the identity of the town and *is now being regulated by a Village Commercial District. These regulations should be evaluated to ensure that they provide sufficiently clear standards for building design and reasonable procedures for design review. An inventory of business locations should be undertaken to determine if the area as zoned is appropriate. In addition, it may be appropriate that other neighborhood areas of Tiverton are served by village scale retail, and that this be supported by a change to Village Commercial zoning.*

Policy 4a: ***Evaluate the Village Commercial District to ensure that the unique identity of Tiverton Four Corners is preserved.***

Policy 4b: ***Consider the application of the village commercial zoning concept to other areas of the town as may be appropriate.***

Marine Related Uses

The Tiverton harbor is an important, but limited resource that has economic, residential, cultural and recreational value for the community. *The zoning revisions of 2001 included the establishment of a Waterfront District to govern large portions of the Sakonnet River and Mount Hope Bay waterfront areas. This district generally restricts the commercial areas of the waterfront to marine related uses such as boat launches, marinas, fisheries and other maritime activities. In 2003, the Stone Bridge Improvement Task Force (appointed by the Town Council) began to study possible improvements to the Tiverton Basin and Sakonnet River waterfront. The project proposed ways to utilize a newly acquired waterfront parcel as well as returning the area to a village atmosphere by quieting traffic, enhancing scenic quality and making the area more pedestrian friendly. It also included evaluating the feasibility of removing the gas station alongside the town owned Grinnell's Beach. These efforts should continue so that Tiverton's historical connections to the waterfront remain strong and accessible to the public.*

Policy 5a: ***Follow-up on waterfront-related studies and design concepts with a comprehensive waterfront plan that evaluates long term options for development, improved aesthetics and public access.***

Policy 5b: ***Complete improvements to the Stone Bridge area, including the expansion of Grinnell's Beach and Independence Park by exploring alternatives for acquiring and removing the gasoline station.***

Diversification of Town Tax Base

There continues to be a need for development that generates net tax revenue but is of a scale that is consistent with the town's size and character. Considerable efforts by the town to achieve an appropriate balance between commercial development and quality of life has been made; creating new land use regulations for the town's industrial/technology park, and exploring options for a mixed-use town center are examples. There are a number of options to diversify the tax base in a manner compatible with the town's character, such as developing the industrial park, supporting and expanding the traditional industries of agriculture and fishing, as well as the arts, and allowing new development that includes mixed uses (see Economic Development Chapter).

Policy 6*:* ***Support industrial and commercial uses that result in net tax revenue and desirable employment opportunities, and are compatible with the small town and rural character of the town.***

Town-Owned Parcels

Town-owned land represents an important resource which can help the Tiverton achieve its housing, open space and economic development objectives. There presently exists no comprehensive inventory or evaluation of this important resource for the purposes of *long range* planning. Such an inventory needs to be produced and regularly evaluated and updated.

Policy 7: **Inventory and evaluate town-owned property to determine its best use based on the comprehensive plan. Review the inventory on a periodic basis as part of the capital planning process.**

Administration, Enforcement and Coordination of Land Use Regulations

Land use regulations are principally administered by *the Administrative Officer to the Planning Board*, and the Building Official *and Director of Public Works. While the town has retained professional engineering and planning services on a consulting basis, the increasingly complex demands of reviewing major developments, many of which have the potential to profoundly shape the future character of the town, require that the town increase the level of its professional support. The town must be prepared to both plan proactively for the future and deal with the administrative, technical and planning requirements of regulating ongoing development.*

Policy 8: ***Establish a planning department with a full-time planner and staff that support the work of the Planning Board and works in conjunction with all town departments.***

Utility Infrastructure

A major factor in future land use is the availability of public sewer and water. While the need for sewers in north Tiverton is well documented (see Community Services and Facilities Chapter), a more extensive public sewer system would open up areas to development that are presently limited by poor soils that prevent the use of individual septic disposal systems. This is especially true in south Tiverton where the lower density of development gives the area its famed rural character. In addition, installing public water service into areas that do not have public sewers can alter ground water levels and negatively impact the operation of private septic systems. Land use decisions must be consistent with future plans for town services discussed in the Services and Facilities Chapter. It also is evident that the town administration must be able to exercise control over future construction of utility infrastructure if it is to effectively manage future land use.

Policy 9*:* ***Allow the expansion of sewer and water utilities into areas of town that are not presently serviced only in a manner that is consistent with the desired land uses and densities as identified in this Comprehensive Community Plan.***

The siting of such structures as satellite dish antennas, communication towers, *wind towers*, water towers, pumping stations and fixtures, water storage tanks and *utility wires* should be undertaken with care and concern for their aesthetic impact on the community as a whole. Landscaped screening should be utilized and siting should avoid heights of land where their appearance would be most intrusive on the visual quality of the town. *Underground utility wires servicing new major subdivisions and commercial and industrial developments should be encouraged.*

Policy 10: ***Develop*** **regulations with regard to the siting of utility and accessory structures*, so that the design and operation of such utilities are consistent with the town's small town and rural character.***

LAND USE CHAPTER APPENDIX
BUILD-OUT ANALYSIS METHODOLOGY

The Municipal Build-out Analysis Toolkit (BAT), a computerized tool consisting of added functionality and extensions to ESRI ArcView and MS Excel was used to conduct the residential buildout. Initially developed by Applied Geographics, Inc. and modified in 2005 by Mapping and Planning Services, Inc., this tool has been most recently applied to conduct both residential and commercial/industrial build-out analyses for twenty-five water suppliers as part of the Phase II Supplemental Water Supply Study (2005) for the RI Water Resources Board.

The BAT consists of two primary components:

- The *Scenario Generator*, which uses GIS data in ESRI ArcView to build a town-wide Developable / Constrained (DevCon) composite, and

- The *Buildout Calculator*, comprising a programmed set of tables in Microsoft Excel, which applies the rules of municipal bylaws, constraint characteristics and yield factors to the DevCon to produce scenario-specific buildout statistics for the Town and all the zoning districts within it.

The *Scenario Generator* performs a series of overlay analyses enabling Absolute and Partial Constraints to be factored in. It operates with any themes loaded into any views in an ArcView project, enabling the integration of new and/or updated GIS data (for example, zoning, land use, open space).

For the Town of Tiverton, the Absolute Constraints included those land uses already considered developed (residential, commercial, industrial, utility/waste disposal and transportation, developed recreation, institutional, and water land uses), as shown on Figure 5-1. The 1995 RIGIS Land Use/Land Cover data set was updated using 2003 RIDOT and 2003 USDA-NAIP digital orthophotography, and then edited with 2005 field corrections. The Generalized Land Use/Land Cover 2005 acreages are listed in Table 5-1. Existing mining and extractive land use areas (including quarries) were considered to be developable.

Other areas within the town considered as absolutely constrained included those permanently protected open space areas (see Figure 9-1), and water areas and surface water reservoirs as shown on Figures 5-1 and 4-2, respectively. Absolutely constrained lands were considered already built-out and would not be subject to further development or redevelopment for this analysis. This assumption has the likely effect of under-estimating the residential buildout. An estimated 7,929 acres, or approximately 41% of the town is considered to be absolutely constrained.

Partially Constrained lands were assumed to be developable, but depending on the number of those constraints, a factor was applied to consider both the resolution (minimum mapping unit) and spatial accuracy's of the available RIGIS data sets.

Wetlands were considered as a partial constraint (Figure 4-3); however buffer areas around the RIGIS wetlands were not factored in.

Soil types with slopes greater than or equal to 25% were considered, as well as soils classified as not suitable for community development (Groups 4 & 5). Areas likely subject to the 100-year flood zone were also considered as partial constraints. In areas with only one partial constraint it was assumed that 25% of that "raw acreage" will be developed, while areas with multiple partial constraints would only be 3% developable. An estimated 4,606 acres, or approximately 24% of the town is considered to have either single or multiple partial constraints.

Those areas considered with Absolute and Partial Constraints are shown on Figure 5-4. Areas that have no development constraints are an estimated 6,923 acres, or 36% of the town.

The results of the GIS-based overlay analyses, including the area of each zoning district (see Figure 5-2), were imported into the Buildout Generator Model. Within each zoning district, 15% of the gross area of the zoning district was removed to allow for new roads and/or oddly shaped lots to calculate Net Area (acres). The Buildable Area was calculated by applying a Build Factor to the Net Area based on the level of constraint, where no constraints = 1, partial constraints + 0.75 (meaning that 25% is buildable) and fully constrained = 0. Areas within both the primary and secondary protection areas of the Watershed Protection Overlay District were also considered.

The number of buildable lots within each zoning district area were calculated (rounded down to a whole number) and were based on the minimum lot size allowed by current zoning. Future residential land uses within zoning districts that allowed both single family and two-family residential development were projected at 70% and 30% of that zone, respectively. This was projected within the R-30 and R-60 districts. Existing lot configurations (shape, dimensions, frontage, etc.) were not considered, since the Town does not have GIS parcel mapping developed that would allow that information to be readily factored in.

Infill development was not considered, nor was the redevelopment or conversion of existing structures. In addition multi-family or accessory family dwelling units were not considered since they require a special-use permit.

Mapping and Planning Services
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